

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number  
**WO 2005/060362 A2**

(51) International Patent Classification: Not classified

(21) International Application Number:  
PCT/KR2004/003425

(22) International Filing Date:  
23 December 2004 (23.12.2004)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
10-2003-0095707  
23 December 2003 (23.12.2003) KR

(71) Applicant (for all designated States except US): **LG ELECTRONICS INC.** [KR/KR]; 20, Yoido-Dong, Yongsongpo-Gu, Seoul 150-010 (KR).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **YEE, Young-Joo** [KR/KR]; Maehwamaeul Jugong Apt. 210-604, 215, Yatap-Dong, Bundang-Gu, Seongnam, Gyeonggi-Do 463-916 (KR).

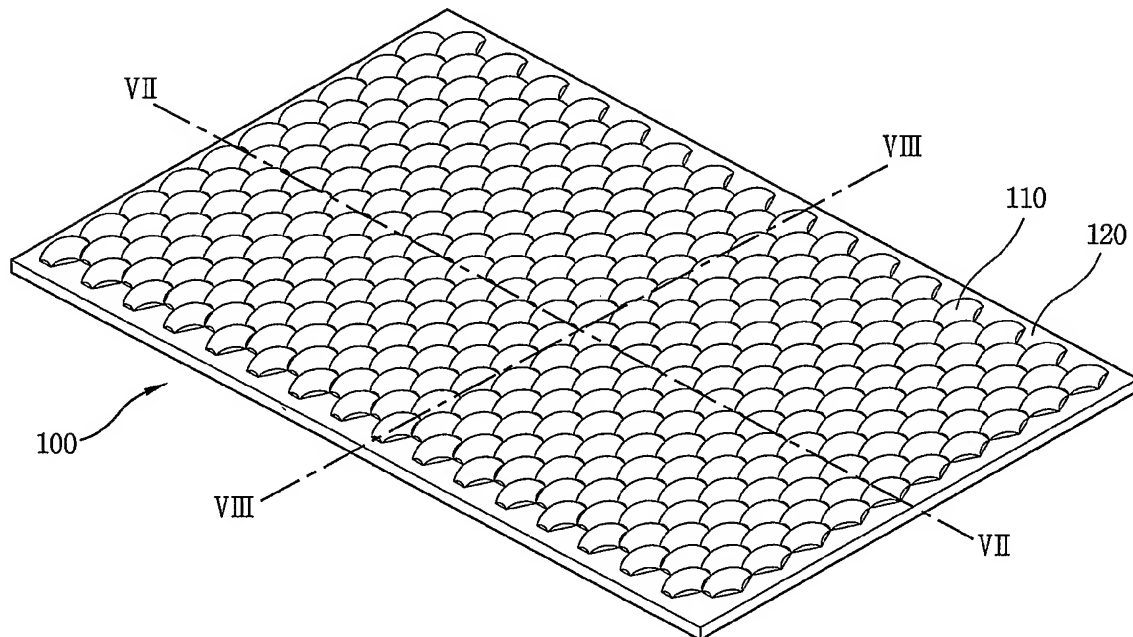
(74) Agent: **PARK, Jang-Won**; Jewoo Bldg. 5th Floor, 200, Nonhyun-Dong, Gangnam-Gu, Seoul 135-010 (KR).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ASPHERICAL MICROLENS ARRAYS AND FABRICATION METHOD THEREOF AND APPLICATIONS USING THE SAME



(57) Abstract: An aspherical microlens arrays comprise a base, and a plurality of aspherical microlens arranged on the base and having different curvature radiuse and conic coefficient respectively, along two orthogonal axes on the base perpendicular to an optical axis, by which a degree of refraction, namely, a numerical aperture can be easily adjusted depending on each axial direction, a spherical aberration can be reduced, and concentration efficiency can be improved. In addition, in case of applying the aspherical microlens arrays to a projection screen, an image sensor, or the like, it is advantageous to improve sensitivity and resolution thereof.

WO 2005/060362 A2



**Published:**

— without international search report and to be republished  
upon receipt of that report

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*